

Nikhil Kumar

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EDUCATION

Netaji Subhash Engineering College, Kolkata	2022 – 2026
<i>B.Tech in Electronics and Communication Engineering (Till 6th Sem)</i>	<i>CGPA: 6.58</i>
Laxmi Narain Dubey (L.N.D.) College, Motihari, Bihar	2021
<i>Class 12th, BSEB Board</i>	<i>Percentage: 75.5%</i>
St. Xavier's High School, Motihari, Bihar	2019
<i>Class 10th, CBSE Board</i>	<i>Percentage: 77.6%</i>

EXPERIENCE

Embedded Systems/IOT Intern	June - July 2025
<i>IC Centre, Jadavpur University</i>	<i>Kolkata, West Bengal</i>

- Designed and developed IoT prototypes using Arduino and ESP32 platforms with real-time sensor data processing in C/C++ and MicroPython.
- Built a heart rate monitoring system leveraging the Pulse Sensor Amped for precise biometric data acquisition and analysis.
- Integrated cloud connectivity using MQTT and Blynk, and implemented communication protocols including I2C, SPI, and UART for seamless data transmission.

PROJECTS

Smart Temperature & Humidity Monitor	<i>C++, Arduino IDE, DHT11 Sensor, LCD Display</i>
* Built a microcontroller-based system using Arduino Uno and a DHT11 sensor to measure ambient temperature and humidity. .	

* Programmed sensor data acquisition in C++ and displayed live readings on a 16×2 LCD module.

* Implemented threshold-based alerts using a buzzer for abnormal temperature or humidity levels.

* Optimized sensor reading intervals to reduce power consumption and ensure stable data output.

IoT-Based Real-Time Heart Rate Monitoring System	<i>C++, Arduino IDE (built-in libraries)</i>
* Designed and built a heart rate monitoring system using Arduino Uno R3 and Pulse Sensor Amped for real-time physiological data tracking.	

* Programmed the microcontroller to acquire and process heart rate signals, enabling serial communication for live data visualization on a local system.

* Optimized signal handling for accurate pulse detection and reliable data transmission with minimal latency.

TECHNICAL SKILLS

Languages: C/C++, SQL (PostgreSQL), JavaScript, HTML/CSS

Frameworks: ReactJS, Bootstrap, Tailwind CSS

Developer Tools: Git, GitHub, Docker, Google Cloud Platform, Visual Studio

Relevant Coursework: Data Structures and Algorithms, Object-Oriented Programming, Database Management Systems, Computer Networks

Communication & Thinking: Structured thinking, logical reasoning, articulate writing, professional communication, team collaboration

ACHIEVEMENTS

Problem Solving: Solved 100+ Data Structures and Algorithms problems on platforms including GeeksforGeeks and LeetCode.

Hackathon: Qualified for the Smart India Hackathon (Internal Round) by developing a University Network Portal to facilitate communication and resource sharing among students and faculty.